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Fla. Dept. Agric. & Consumer Services
Division of Plant Industry

PROCEDURES FOR COLLECTING, PRESERVING, AND SUBMITTING PLANT SPECIMENS FOR IDENTIFICATION

K. R. Langdon

Plant identification within the Division of Plant Industry has been handled by Dr. K. R. Langdon since 1964. Accurate identification of host plants is particularly important to the technical bureaus of Entomology, Nematology, and Plant Pathology. This identification service is being provided to these bureaus and to other personnel needing and requesting it. Submitting specimens according to the following procedures will help us to provide better, faster, and more reliable identifications.

Plants to be submitted for identification should be collected with as complete material as is available. Whenever possible include a flowering branch, a fruiting branch, or both. Flowers and fruits frequently are not available at the same time, or both may be out of season when the specimen is collected. Also many young plants, such as much of the nursery stock, are below flowering age. If a particular specimen has no flowers or fruits, an effort should be made to locate other specimens of the same species in the area which do have flowers or fruits. If flowers or fruits are not available, then the specimen must be submitted without them or collected at a different time when it is in flower or fruit.

In addition to flowering or fruiting material, if possible, include a leafy branch. The only exceptions would be plants, such as cacti, which are normally leafless, or deciduous plants which are bare at the time. Never collect and submit only detached leaves or leaflets as long as the plant has an aboveground stem and isn't too large (palm, etc.). For plants small enough to do so, pull up the entire plant including the root, stem base, a portion of the rhizome, or other lower portions to indicate if the plant is annual, perennial, etc. It is often helpful (though not always necessary) with bulbous plants to include the bulb, since the type and structure of the bulb can be important.

Most plants can be submitted fresh, if submitted without delay. Never store fresh material longer than overnight before submission. Exceptions to submitting fresh material include the following which should be pressed before submitting and as soon as possible after collecting: plants with flowers which last only a very short time, such as hibiscus or morning-glory; material other than succulents which must be held for a few days; or any delicate materials which wither quickly. All succulents should be submitted fresh. Nearly all other plants can be submitted either fresh or dry.

Most plant material to be submitted fresh should be wrapped in dry paper towel, sealed in a plastic bag, placed in a mailing tube, and mailed as soon as possible. Botanical specimens to be handled by the Division of Plant Industry should be sent to the attention of Dr. K. R. Langdon, Botanist. All others should be sent to the appropriate Agricultural Extension office or appropriate herbarium.

Contribution No. 213, Bureau of Nematology, P. O. Box 1269, Gainesville, FL 32602

Specimens submitted to the technical bureaus for insects, diseases, nematodes, etc., with the host unknown, should include the same type material listed above so that it can be passed on to us for identification, unless separate botanical specimens are submitted. If submitted separately, indicate by number or some other means, which specimens belong together.

There are several ways of pressing plant material. The best method is with a plant press using blotters and ventilators. Another method available to anyone is simply to put down several thicknesses of newspapers, place the plant specimen between a sheet (single thickness) of newspaper, place this on top of the other papers, add several more thicknesses of paper, then additional specimens as above until all specimens are in place. Finally, place a moderately heavy weight, such as books or a weighted box, on top to compress the specimens. A prime objective in any pressing operation is to remove the moisture from the plant specimens. Without special drying equipment, this is usually accomplished by changing the blotters in the press or papers between specimen sheets in the stack as they absorb moisture from the specimens. This must be done at least once daily or preferably twice daily until the specimens are dry.

Once the specimens are dry, they can be placed in their papers in a manila envelope between pieces of cardboard for stiffness and protection, and mailed.

Fleshy fruits present a special problem. Immature fruits usually ship satisfactorily. If the fruits are ripe or nearly ripe, they may break down very rapidly in transit if submitted fresh. If breakdown is a problem, they can be preserved in isopropyl alcohol or 10% formalin. To avoid shipping breakable containers or free liquid, specimens may be placed in the preserving liquid for from several days to a few weeks, then removed and wrapped in paper towel lightly moistened (not soaked) with the preservative solution, sealed in a plastic bag in a mailing tube, and shipped.

Information submitted with the specimen should include: name of collector, date collected, property where collected (name, address, or other indication of location), name of city where collected or nearest to site, any name or names known for plant, flower color (which can be lost in drying or shipping), an approximate indication of height of plant, or any other information which would be helpful in identification but which is not apparent from the specimen.

Proper submission of specimens with adequate material makes our job easier and allows more reliable identifications as well as more rapid service.